Q & A MOSQUITO TIP

Q: Do mosquitoes build resistance to insecticides used at BCMC?

A: Resistance is an insect's ability to avoid succumbing to the lethal effects of an insecticide and is always a concern. Resistance can become a problem, especially where the same active ingredient of a material is used to control both larvae and adults. A variety of insecticides are used at BCMC—different active ingredients with different ways they work to control mosquitoes—which helps prevent resistance. Tests are run in the field and in the lab (bottle bioassays) to ensure that the control materials used are doing their job.

SPECIAL PROGRAMS

- Residents who are highly allergic to mosquito bites or have special needs may qualify for the "Medical Needs" program, which offers extra larviciding and adulticiding services. The need must be verified by a physician.
- Residents who prefer their property not be treated may be excluded from treatment. We simply ask that they position reflective signs (provided by BCMC and shown at left) at their property boundaries, which aid the truck drivers in recognizing properties to avoid.
- The "Long Driveway" program is designed to provide relief from biting adults to residents with long driveways, where driving by the residence on the main road would not be beneficial. Approved addresses are mapped and fogged regularly.

LAB OPERATIONS

Larval Surveillance

Monitoring spring *Aedes* mosquitoes will begin in late-March through tracking of larval development in about forty woodlots. Larvae will be sampled with a pint-sized dipper and counted before and after treatments to determine management effectiveness. This surveillance will continue until mid-May when spring species emerge as biting adults. At that point, we'll switch gears and begin summer larval surveillance, which will be conducted continuously through the season. Surveyed habitats include woodland pools, marshes, flooded fields, cross country drains, roadside ditches, catch basins, flower pots, tires, tree holes, idle swimming pools, and retention ponds. Samples of larvae will be returned to the lab for species identification.

Adult Surveillance

Adult mosquito populations will also be checked using the following mechanical traps: New Jersey Light Traps, CDC Traps, and Gravid Traps. Data will be collected to estimate species populations and distribution, to decide on control strategies, to evaluate treatment effectiveness, and for disease surveillance purposes. Known vectors will be submitted to Michigan State University for viral analysis.

Disease Surveillance

Disease surveillance efforts will continue through submitting mosquito vectors and collecting and testing American Crows and Blue Jays. Mosquitoes will be tested to see if they're carrying various types of encephalitis virus (West Nile, Eastern Equine, LaCrosse, and St. Louis). The VecTest® will be used to analyze saliva samples for West Nile virus from the dead birds; all information collected will be shared with the web-based database maintained by the State of Michigan.

March 3, 2010

Bay County Mosquito Control 2010 Program Plan

ORGANIZATION

The primary goal of BCMC is to protect public health from diseases transmitted by mosquitoes. In order to accomplish this, mosquito populations are reduced to tolerable levels, which also reduces their level of annoyance. Bay County Mosquito Control provides a variety of services to its residents: prevent, monitor, and control mosquito-borne disease, survey and control nuisance and vector mosquitoes, and promote public education regarding all aspects of the program, with emphasis on homeowner control.

2010 HIGHLIGHTS

- Increase aerial acres to 37,000
- NPDES permit process—need by April, 2011
- Re-design larviciding maps
- Purchase ULV fogging machine
- 1 new liquid ditch truck
- Outfit 1 ditch truck and 1 ULV spray truck with rear-mounted vehicle warning LED lights
- Scrap tire drive with northern Bay County drop-off location
- Continue evaluating Natular products in catch basins, ditches, and retention ponds
- Attend annual Michigan Mosquito Control Association conference
- Order new laptop computer
- Order new printer
- MDA-administered testing in conjunction with training session

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MAPPING

We continue to update both adulticiding and larviciding maps as changes are made to roads, subdivisions, and habitats.

PERSONNEL

Seven full-time staff members are employed to complete a range of tasks, including mosquito surveillance and suppression, supervision, mapping, data entry, education, and equipment/vehicle repair. In addition, 33 seasonal employees will be hired for the 2010 season. Recruitment will take place through classified ads and the Delta College Employment Fair on March 2, 2010. Interviews for qualified candidates occur from March through mid-May, with hourly wages remaining at $8 (days) and $10 (nights). Seasonal staff will attend a training session, be issued a training manual, and must pass an exam administered by the MDA to become certified pesticide applicators.

SPRING SURVEILLANCE/TREATMENT

Spring larviciding controls “snowmelt” *Aedes* mosquito larvae in woodlots using the bacterial product *Bti* before the larvae emerge as biting adults. Aerial and ground applications of *Bti* will be timed to coincide with the second and third instar larval stage (when larvae hungrily feed). Clarke of Roselle, IL, will provide helicopter services while Earl’s Spraying Service of Breckinridge, MI, will be the fixed wing applicator for the second year. Woodland area treated by air will increase to about 37,000 acres. Treatment occurs after extensive surveillance has taken place. Below is a list of components of the spring aerial program:

- Monitor 40+ woodlots
- Treat 500 acres by ground crews
- Operate out of Midland Barstow Airport for fixed-wing program
- Utilize 8 possible loading zones with the helicopter
- Dosage rate of 5 pounds *Bti*/acre
- Lower dosage rate of 4 pounds *Bti*/acre in Mt. Forest and Gibson Townships

EDUCATION

Community outreach will continue to be an important part of the program. Educational programs and presentations are designed to raise awareness of the mosquito’s habitat and life cycle. Presentations are given to students and community service groups, while flyers and brochures are hand-distributed or mailed.

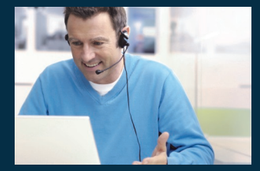
SUMMER OPERATIONS

Surveillance and treatment of temporary and permanent breeding sites will be stressed to prevent adult emergence. Habitats with a previous history of breeding will be investigated, with additional emphasis on mapping new sites. We expect to survey nearly 20,000 sites, treating about 15%. We will give emphasis to source reduction in the form of dumping water from containers to eliminate larvae. Technicians will respond to service requests phoned in by the public, using a variety of control materials depending on the life stage encountered and as needed. Catch basins, roadside ditches, idle pools, fields, woodlots, tires, and artificial containers will be monitored regularly.

Fogging to reduce adult mosquitoes will be carried out using 8 ULV (Ultra Low Volume) spray units. Truck-mounted fogging will occur from sunset until 1:00 a.m., provided mosquito populations are high enough to warrant treatment.

SCRAP TIRE DRIVE

We plan to hold a community-wide tire drive during the 2010 season. Ten tires without rims can be dropped off by each Bay County resident. The tire drive is designed to collect tires from residents while businesses are excluded. The tire drive will be held at the fairgrounds, with a second drop-off location in northern Bay County. Tires are shipped to Environmental Rubber Recycling of Flint via semi trailers where they are shredded so they no longer hold water and breed mosquitoes.



CUSTOMER SERVICE

In a typical year, we will respond to over 2,000 service requests from Bay County citizens. Taking calls reporting large populations of mosquitoes is another means we have for surveillance. Traps can then be placed in response to these calls to monitor mosquito abundance and species activity. Mosquito control in areas surrounding community events will also take place.

DATA ENTRY

A database of over 14,000 known breeding sites will be maintained and updated routinely.